Amendments to the Claims

1. *(Currently Amended)* An electric device comprising:

- a semiconductor body ~~(1)~~ comprising a group IV semiconductor material having a surface ~~(2),~~
- a nanostructure ~~(3)~~ of a III-V semiconductor material,

characterised in that the nanostructure is a nanowire ~~(3)~~ being positioned in direct contact with the surface ~~(2)~~ and having a first conductivity type, the semiconductor body ~~(1)~~ having a second conductivity type opposite to the first conductivity type, the nanowire~~(3)~~ forming with the semiconductor body a pn-heterojunction ~~(4).~~

2. *(Currently Amended)* An electric device as claimed in Claim 1, characterised in that the III-V material is a diffusion source ~~(5)~~ of dopant atoms into the semiconductor body.

3. *(Currently Amended)* An electric device as claimed in Claim 2, characterised in that the diffusion source ~~(5)~~ contains the group III atoms and/or the group V atoms from the III-V material.

4. *(Currently Amended)* An electric device as claimed in ~~Claims 1 or 3~~claim 1, characterised in that there is a region ~~(6)~~ in the semiconductor body in direct contact with the nanowire ~~(3),~~ which has the same conductivity type as the nanowire.

5. *(Original)* An electric device as claimed in Claim 2, characterised in that the III-V material comprises an excess of the group III atoms and/or the group V atoms of the III-V material, which excess atoms form the dopant atoms in the semiconductor body.

6. *(Original)* A device according to claim 1, characterised in that the nanowire is in epitaxial relationship with the semiconductor body and the materials have a mutual lattice mismatch.

7. *(Currently Amended)* A device according to claim 2, characterised in that the resistance between the nanowire ~~(3)~~ and the semiconductor body ~~(1)~~ is below 10^{-5} Ohm cm^2.

8. *(Currently Amended)* A device according to claim 1, characterised in that a lattice mismatch between the semiconductor body ~~(1)~~ and the nanowire ~~(3)~~ is smaller than 10%.

9. *(Currently Amended)* A device according to claim 1, characterised in that the nanowire ~~(3)~~ is a substantially single-crystal nanowire.

10. *(Currently Amended)* A device according to claim 1, characterised in that a plurality of nanowires are arranged in an array ~~(7)~~.

11. *(Currently Amended)* A method of forming a pn-heterojunction, the method comprising the steps of:

- forming a nanostructure ~~(3)~~ of a second semiconductor material on a surface ~~(2)~~ of a semiconductor body ~~(1)~~ of a first semiconductor material,

the first semiconductor material comprising at least one element from group IV of the periodic system and the second semiconductor material being a III-V material,

characterised in that the nanostructure is a nanowire ~~(3)~~ grown on the surface ~~(2)~~ of the semiconductor body ~~(1)~~ and receiving a first conductivity type, the semiconductor body having a second conductivity type opposite to the first conductivity type, the nanowire ~~(3)~~ forming with the semiconductor body ~~(1)~~ a pn-heterojunction ~~(4)~~.

12. *(Currently Amended)* A method as claimed in Claim 11, characterised in that the nanowire of III-V semiconductor material is used as a diffusion source ~~(5)~~ of dopant atoms into the semiconductor body.

13. *(Original)* A method as claimed in Claim 12, characterised in that group III atoms and/or the group V atoms from the III-V material are the dopant atoms.

14. *(Original)* A method as claimed in Claim 11, characterised in that the nanowire is grown in epitaxial relationship with the semiconductor body.

15. *(Original)* A method as claimed in Claim 14, characterised in that the nanowire is grown according to the vapour-liquid-solid (VLS) growth method.

16. *(Currently Amended)* A method as claimed in ~~Claims 14 or 15~~claim 14, characterised in that an excess of the group III atoms and/or the group V atoms are grown in the III-V semiconductor material, which excess atoms are diffused into the semiconductor body.

17. *(Currently Amended)* A method as claimed in ~~Claims 14 or 15~~claim 14, characterised in that at least one element of the periodic system is incorporated in the III-V semiconductor material of the nanowire, which element is diffused into the group IV semiconductor material, forming an n-type or p-type dopant atom.

18. *(Currently Amended)* A method as claimed in ~~Claims 11 to 17~~claim 11, characterised in that the dopant atoms form a region ~~(6)~~ in the semiconductor body in direct contact with the nanowire ~~(3)~~.

19. *(Currently Amended)* A method as claimed in ~~Claims 11 or 12~~claim 11, characterised in that the III-V semiconductor material of the nanowire is heated above 600 °C.

20. *(Original)* A method as claimed in Claim 19, characterised in that the nanowire is embedded in a dielectric before heating.

21. *(Currently Amended)* A method as claimed in ~~Claim 12 or 19~~claim 12, characterised in that the nanowire is selectively removed after being used as diffusion source ~~(5)~~.